

uninsulated MPT must be in accordance with Table 1 or the following formula based upon the pressure relief device operating at a pressure not to exceed the test pressure:

$$Q = 633,000 \left( \frac{A^{0.82}}{LC} \right) \sqrt{\frac{ZT}{M}}$$

where:

$Q$ =Minimum required rate of discharge in cubic feet per minute of free air at standard conditions (60 °F and 14.7 psia).

$M$ =Molecular weight of the product, or 86.7.

$T$ =Temperature, degrees Rankine (460° + temperature in degrees F of gas at relieving temperature), or 710° Rankine.

$A$ =Total external surface area of the tank compartment in square feet.

$L$ =Latent heat of the product being vaporized at relieving conditions in Btu per pound, or 144 Btu per pound.

$Z$ =Compressibility factor of the gas at relieving conditions, or 1.0.

$C$ =Constant based on relation of specific heats, in accordance with Appendix J of Division 1 of Section VIII of the ASME Code, 1974 edition, or 315.

(b) The total emergency venting capacity ( $Q$ ) of an insulated portable tank may have a reduction if—

(1) It is shown to the Coast Guard that the insulation reduces the heat transmission to the tank;

(2) The present reduction of the emergency venting capacity ( $Q$ ) is limited to the percent reduction of the heat transmission to the tank or 50 percent, whichever is less; and

(3) The insulation is sheathed.

TABLE 1—MINIMUM EMERGENCY VENTING CAPACITY IN CUBIC FEET: FREE AIR/HOUR (14.7 LB/IN<sup>2</sup>A AND 60 °F)

Exposed area square feet <sup>1</sup>	Cubic feet free air per hour	Exposed area square feet <sup>1</sup>	Cubic feet free air per hour
20	27,600	275	237,000
30	38,500	300	256,000
40	48,600	350	289,500
50	58,600	400	322,100
60	67,700	450	355,900
70	77,000	500	391,000
80	85,500	550	417,500
90	94,800	600	450,000
100	104,000	650	479,000
120	121,000	700	512,000
140	136,200	750	540,000
160	152,100	800	569,000
180	168,200	850	597,000
200	184,000	900	621,000
225	199,000	950	656,000

TABLE 1—MINIMUM EMERGENCY VENTING CAPACITY IN CUBIC FEET: FREE AIR/HOUR (14.7 LB/IN<sup>2</sup>A AND 60 °F)—Continued

Exposed area square feet <sup>1</sup>	Cubic feet free air per hour	Exposed area square feet <sup>1</sup>	Cubic feet free air per hour
250	219,500	1,000	685,000

<sup>1</sup> Interpolate for intermediate sizes.

[CGD 73-172, 39 FR 22950, June 25, 1974, as amended by CGD 84-043, 55 FR 37410, Sept. 11, 1990; 55 FR 47477, Nov. 14, 1990]

#### § 64.65 Vacuum relief device.

(a) Each MPT that is designed for an external pressure of less than 7.5 psig must have a vacuum relief device.

(b) A vacuum relief device for an MPT must—

(1) Open at an external pressure of not less than 3 psig; and

(2) Have an opening with a cross-section of 0.44 square inch or more.

[CGD 84-043, 55 FR 37410, Sept. 11, 1990]

#### § 64.67 Shutoff valve.

A shutoff valve may not be located—

(a) Between the tank opening and pressure relief device; or

(b) On the discharge side of the pressure relief device.

#### § 64.69 Location of the pressure relief device.

A pressure relief device must be—

(a) Accessible for inspection and repair before stowage of the tank; and

(b) Attached so that escaping gas does not impinge on the tank or framework.

#### § 64.71 Marking of pressure relief devices.

A pressure relief device must be plainly and permanently marked with the—

(a) Set pressure rating;

(b) Rated flow capacity expressed as cubic feet of standard air (60 °F 14.7 psia) per minute and the pressure at which the flow capacity is determined;

(c) Manufacturer's name and identifying number; and

(d) Pipe size of inlet.

#### Subpart D [Reserved]